ABSTRACT OF THE DISCLOSURE

A robotic cart pulling vehicle includes a positioning error reducing system for reducing accumulated error in the ded-reckoning navigational system. The positioning error reducing system including at least one of a low load transfer point of the cart attaching mechanism, a floor variation compliance structure whereby the drive wheels maintain a substantially even distribution of load over minor surface variations, a minimal wheel contact surface structure, a calibration structure using at least one proximity sensor mounted on the robot body, and a common electrical and mechanical connection between the cart and the robot vehicle formed by a cart attaching post.